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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,241	07/13/2001	Hiroki Koyama	2282-0142P	8879

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EXAMINER
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NORTON, NADINE GEORGIANNA

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/889,241

Applicant(s)

KOYAMA ET AL.

Examiner

Nadine Norton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Priority Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 July 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☒ Claim(s) 6 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.                      6) ☐ Other:

## DETAILED ACTION

### *Claim Objections*

Claims 6 and 9 are objected to because of the following informalities:

The limitations in claims 6 and 9 do not further limit the parent claim apparatus because such limitations are intended use which do not further limit the structure of the claimed apparatus.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation of "hydrocarbon feed oil feed which 90% distillation temperature is 250° or higher" renders the claim indefinite because it is unclear whether the percentage is a wt/wt%, a vol/vol%, etc. It appears as if applicants intend to employ language such as "wherein 90% by weight (or volume ?) boils at or above 250°C".

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***Claim Rejections - 35 USC §102/103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-14, and 16-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Cash (4,430,203).

The reference of Cash (4,430,203) discloses a process involving contacting hydrogen with a feed. The process involves contacting hydrogen with a feed and passing it through a first catalyst bed in the form of bed (10). Next, the reference teaches that the treated feed is passed to interspace 25 wherein hydrogen is added via lines (13) and (29) and gases are withdrawn via (28). See column 2, lines 25-45. The gases include hydrogen sulfide and ammonia. See column 2, lines 35-38. Suitable feeds include oils derived from tar sand and shale. Interspace

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(25) contains a distribution tray and a sieve tray. See column 2, lines 50-57. The treated feed passes to a second catalyst bed in the form of bed (22). See the figure.

The reference of Cash (4,430,203) succeeds at teaching a process with steps and apparatus corresponding to applicants' claimed initial feed/hydrogen contact, passing a feed through a first catalyst bed, contacting the feed from the first catalyst bed with hydrogen, and contacting the feed with a second catalyst bed. The reference's holding trays are considered to correspond to applicants' holding member limitations. The disclosure of a "sieve" tray is considered to meet applicants' packing material limitation because sieves are formed with packing material. In addition, space (25) is considered to function as a separation space because a gaseous product is separated from a liquid product exiting the first reaction zone. Cash's disclosure of heavy feeds are considered to encompass applicants' specifically claimed boiling point limitations. Since added hydrogen between stages flows downward with the feed through catalyst bed 2, it is considered to be co-current.

Also, applicants' intended use limitations do not further distinguish applicants' claimed apparatus over the applied reference. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate from a prior art apparatus if the prior art apparatus teaches all of the structural limitations. Ex Parte Masham, 2 USPQ 2d 1647 (Bd. Pat. App. & Int. 1987).

It is noted that the reference does not refer to the hydrogen contacting in between catalyst beds as "stripping" or "counter-current" contact. However, such hydrogen contacting with the processed feed between steps in conjunction with a vapor withdrawal is considered to inherently function as stripping because the same steps responsible for accomplishing stripping

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are performed (ie. Contacting hydrogen with down coming hydrocarbon products to remove hydrogen sulfide and ammonia).

Applicants' process and apparatus are anticipated by the reference of Cash (4,430,203) because it discloses essentially the same process steps and apparatus components.

Also, applicants' stripping and hydrogen counter-current contacting would obviously be accomplished upon operating the process of Cash (4,430,203).

***Claim Rejections - 35 USC § 103***

Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cash (4,430,203) as applied to claims 1-3, 5-14, and 16-19 above, and further in view of Graziani et al.(4,695,364).

See teachings of Cash (4,430,203) above.

It is noted that the holding tray disclosed by the reference of Cash (4,430,203) does not appear to have a hole.

The reference of Graziani et al.(4,695,364) is cited to illustrate the conventionality of a collection tray with a discharge hole. See column 10, lines 9-13.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a collection tray with a discharge hole in the process of Cash (4,430,203) because the reference of Graziani et al.(4,695,364) illustrates that collection trays with discharge holes are conventional. Applicants have not shown anything unexpected by replacing the tray of Cash with another conventionally known tray.

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***Prior Art of Record***

The prior art made of record and not relied upon is considered pertinent to applicants' disclosure. The attached references are cited to illustrate the relative state of the art with respect to multiple bed hydrorefining with interstage hydrogen contact.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadine Norton whose telephone number is 703-305-2667. The examiner can normally be reached on Monday through Thursday from 8:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0661.

N.N.  
June 29, 2003

**NADINE G. NORTON  
PRIMARY EXAMINER**

*Nad Norton*